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Water Docket
Environmental Protection Agency
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1200 Pennsylvania Ave, N.W.
Washington, DC 20460

RE: Docket ID No. EPA-R03-OW-2010-0736 – Draft Chesapeake Bay Total Maximum Daily Load

COMMENTS BY THE DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY ON THE DRAFT CHESAPEAKE BAY TMDL

Docket Number EPA-R03-OW-2010-0736

The District of Columbia Water & Sewer Authority (DC Water) appreciates the opportunity to submit the following comments on the Draft Chesapeake Bay TMDL (Bay TMDL).

A. The draft TMDL allocation tables are not well constructed and should be corrected to clearly show and describe the allocations in the final TMDL

The detailed TMDL allocation tables presented in Appendix Q of in the draft Bay TMDL report are not well constructed and contain inconsistencies that make it impossible to know with confidence that EPA has adopted the waste load allocations (WLAs) proposed in the District Department of the Environment's (DDOE's) September 1, 2010 draft Phase I Watershed Implementation Plan (Draft WIP). DC Water has been able to locate the WLAs assigned to Blue Plains in the Draft WIP in Table 9-1 of the draft TMDL Report. However, it has not been able to locate the WLAs for Outfall 001 and the combined sewer overflows (CSOs) that will remain after implementation of DC Water's Long Term CSO Control Plan (LTCP). DC Water assumes that EPA has included the Outfall 001 and CSO allocations from the Draft WIP in the Bay TMDL based on the allocation summary in Table ES-1 and the summary of the backstop allocations in Section 8.3.3 of the draft TMDL Report, but, again, is unable to confirm that the WLAs are, in fact, in the Bay TMDL because of the construction of the allocation tables.

Further, inconsistencies in the allocation tables make it impossible to know which table reflects the allocations proposed for Blue Plains and the District's combined sewer system. The following table illustrates the extent of the consistency problem:

Consistency Check on the DC Allocations: TMDL report Table 9-1 versus Appendix Q (Table Q-1) for Delivered Total Nitrogen Loads.

Segment ID	Jurisdiction	CB 303(d) Segment	TOTN WLA (lbs/yr) Table 9-1	TOTN WLA (lbs/yr) Table Q-1	TOTN Land-based LA (lbs/yr) Table Q-1	TOTN TMDL (lbs/yr) Table Q-1
POTTF DC	MD	Upper Potomac River, DC	2,164,200	2,164,226	45,680	2,209,906
POTTF DC	DC	Upper Potomac River, DC	**2,159,000**	**2,078,474**	12,254	**2,090,728**
POTTF DC	VA	Upper Potomac River, DC	650,200	650,188	14,853	665,041
		Land-based TMDLTotal	4,973,400	4,892,889	72,787	4,965,676
		Atmospheric Deposition LA (lbs/yr)[1]				34,400
POTTF DC		**Overall TMDL Total[2]**				5,000,076
ANATF DC	MD	Anacostia River, DC	39,300	39,331	6,790	46,121
ANATF DC	DC	Anacostia River, DC	106,800	106,809	8,083	114,892
		Land-based TMDLTotal	146,100	146,140	12,874	161,014
		Atmospheric Deposition LA (lbs/yr)[1]				7,200
ANATF DC		**Overall TMDL Total[2]**				168,214

Notes:

1. *The atmospheric deposition LA from Table 9-5 is used to estimate the overall TMDL load with the land-based loads presented in Table Q-1 for comparison purposes, as these are not presented in Appendix Q-1.*
2. *Rounding of loading components presented in Table 9-1 results in totals being accurate to within +/- 100 lbs/yr for TOTN.*
3. *TMDL for TOTN in Table 9.1 mistakenly excluded the atmospheric deposition LA for both POTTF DC and ANATF DC.*

It is incumbent upon EPA to correct these inconsistencies and include detailed allocation tables in the final Bay TMDL that clearly identify and list the allocations assigned to Blue Plains and the District's combined sewer system. Nevertheless, in the absence of any evidence to the contrary, we will assume for purposes of these comments that EPA included in the draft TMDL all of the allocations proposed in the Draft WIP.

B. Blue Plains design capacity and wet weather WLAs

As the U.S. Environmental Protection Agency (EPA) knows, EPA reissued the NPDES permit for DC Water's Blue Plains Advance Wastewater Treatment Plant (Blue Plains) on August 31, 2010 (Permit). The Permit contains effluent limitations and performance conditions governing, among other things, the discharge of total nitrogen (TN) in conformance with TN allocations assigned to Blue Plains and District of Columbia's combined sewer system (CSS) in the District of Columbia's 2004 Chesapeake Bay Tributary Strategy. The TN limitations and conditions in the Permit reflect agreements between DC Water and EPA following many months of negotiation. Therefore, since the Bay TMDL will serve to supersede and replace the TN allocations that are the basis for the TN limitations and conditions in the Permit, we believe it is appropriate to start our comments with an overview of the TN-related limitations and conditions in the Permit.

- Outfall 002 (Complete Treatment) – Effluent limitations and performance conditions
- Outfall 001 (Anticipated CSO Related Bypass) – Performance conditions
- Combined Sewer System (CSS) – Performance conditions.

(1) Complete Treatment (Outfall 002) Design Capacity

The TN effluent limitations for Outfall 002 are based on a design capacity of 370 million gallons per day (mgd). This design capacity is derived from the annual average flow allocations assigned to Blue Plains user jurisdictions in the Intermunicipal Agreement (IMA) of 1985. The IMA is the governing document regarding the use of the Blue Plains and addresses issues such as capacity allocations, capital cost and operating and maintenance cost allocations. Signatories to the IMA are the District of Columbia; Fairfax County, VA; Montgomery County, MD; Prince George's County, MD; and the Washington Suburban Sanitary Commission (WSSC). Capacity allocations in the IMA are as follows:

Blue Plains User Jurisdiction	Annual Average IMA Flow Allocation - MGD
1. District	
• Base Allocation	148.0
• Potomac Interceptor Reserve	4.5
Total District	152.5
2. Maryland	
• WSSC	169.6
• Navy/National Park Service	0.1
Total Maryland	169.7
3. Virginia (Total all users)	47.8
Total IMA Flow Allocation, Outfall 002 (Complete Treatment)	**370.0**

The 370 mgd IMA allocation does not, however, comprise the total design capacity required for Outfall 002 because the Permit also requires Complete Treatment for captured CSS flow as established in the LTCP for the CSS and DC Water's Total Nitrogen Removal/Wet Weather Plan (TN/WW Plan). The average year flow allocation for captured combined sewer flow derived from the LTCP and TN/WW Plan required to receive Complete Treatment is 17 mgd. Therefore, the design capacity required for Outfall 002 is the sum of the 370 mgd IMA flow allocation plus 17 mgd captured combined sewer flow or 387 mgd.

Additionally, Blue Plains is required by the Permit to provide Complete Treatment for captured CSS flows in wet years. Based on studies of past experience for Complete Treatment, discharges from Outfall 002, in a wet year, will average 435 mgd.

In view of the foregoing, the WLAs for Outfall 002 in the Bay TMDL should be based on a design flow of 387 mgd and must be sufficient to be within the range of performance for the treatment technology now under design during a wet-year annual average flow of 435 mgd.

The design flow for Blue Plains, Outfall 002 that incorporates the IMA flow allocations, treatment of captured combined sewer flow and a wet weather year annual average flow of 435 mgd is summarized as follows:

Blue Plains User Jurisdiction	Blue Plains Design flow MGD
1 District	
• IMA Allocation	152.5
• Captured Combined Sewer Flow	17.0
Total District	169.5
2 Suburbs	
• MD to Blue Plains (IMA Allocation)	169.7
• VA to Blue Plains (IMA Allocation)	47.8
Total Suburbs	217.5
3 Blue Plains	
• District	169.8
• Suburbs	217.5
Total, Blue Plains	**387.0** [1]

(1) WLA at design flow to be sufficient to be within the range of performance for the treatment technology during a wet year annual average flow of 435 mgd.

(2) The above design flow for Blue Plains, Outfall 002 is consistent with EPA requirements for Phase I WIPs covering CSO communities as reflected in EPA's October 27, 2010 email, which is attached as **Exhibit No. 1**.

(2) Outfall 001 and Combined Sewer System

The WLAs proposed by DDOE in its Draft WIP (Table 4)[1] for Outfall 001 and the CSOs remaining after completion of the LTCP are those developed by employing the LTCP model. These WLAs have been calculated from LTCP collection system model predictions as the arithmetic average for the wet weather (storm) events for the Bay TMDL model hydrologic period (the years 1991 through 2000) using rainfall recorded at Reagan National Airport.

However, Section 6 of the draft TMDL Report establishes a critical 3-year period within the hydrologic period as the benchmark for determining attainment of water quality standards (WQS). In order to comply with the critical period requirement, WLAs for Outfall 001 and CSOs remaining after completion of the LTCP would have to be based on the average of the years 1993 through 1995. WLAs calculated from LTCP model predictions as the arithmetic average for the wet weather (storm) events for the Bay model critical period (years 1993 through 1995) using rainfall recorded at Reagan National Airport are summarized as follows:

TMDL Allocations Required for Wet Weather Sources to Achieve Attainment of Chesapeake Bay Water Quality Standards – Pounds per Year

Sources	Draft TMDL Critical period 1993	1994	1995	Total	Critical Period Average
A. Blue Plains – Outfall 001					
1. Total Nitrogen	140,510	131,142	168,537	440,189	146,730
2. Total Phosphorus	4,510	4,209	5,410	14,129	4,710
3. Total Sediment	459,695	429,045	551,385	1,440,125	480,042
B. CSOs – Post LTCP					
1. Total Nitrogen	7,352	20	6,112	13,484	4,495
2. Total Phosphorus	1,564	4	1,300	2,868	956
3. Total Sediment	203,365	555	169,054	372,974	124,325

If the critical period applies, the WLAs included in the Draft WIP for Outfall 002 and the remaining CSOs (See footnote 1 to these comments) will have to be revised to include the allocations in the table above rather than the WLAs in Table 4 to the Draft WIP.

Because discharges from Outfall 001 and the CSOs remaining after completion of the LTCP will vary due to rainfall conditions, the Permit includes performance, monitoring, and continuing post-

[1] These WLAs are 134,073 lbs/yr TN, 4,304 lbs/yr TP, and 438,634 lbs/yr TSS for Outfall 001; and 3,809 lbs/yr TN, 810 lbs/yr TP, and 105,350 lbs/yr TSS for the CSO Outfalls remaining after LTCP implementation.

LTCP construction evaluation of these discharges. Therefore, DC Water has asked DDOE to include in its final WIP a statement that compliance with these WLAs for discharges from Outfall 001 and the CSOs remaining after completion of the LTCP shall be based on the arithmetic average of LTCP model predictions for the wet weather (storm events) for the years 1991 through 2000, or the Critical Period years (whichever period is applied by EPA), using rainfall recorded at Reagan National Airport. Such a statement in the final WIP is necessary to provide clear guidance to permit writers and to avoid any suggestion that the WLAs for these discharges can be complied with under all rainfall conditions. DC Water requests that EPA include this same statement in the final TMDL as well.

(3) WLA Comparisons

Based on the above, we have prepared the table in **Exhibit No. 2** to compare the WLAs included in the Draft WIP (and, where appropriate, the draft TMDL) and the WLAs that must be included in the final TMDL to provide DC Water with the allocations needed to comply with the Permit now and in the future. The WLAs in **Exhibit No. 2** are based on the following:

- A design flow of 387 mgd for Outfall 002 (Complete Treatment)
- Effluent concentrations at design flow of 4.00 mg/L TN, 0.18 mg/L TP and 7.00 mg/L Total-Sed.
- Sufficient allocations for Outfall 002 at design flow to be within the range of performance for the treatment technology now under design, during a wet year annual average flow of 435 mgd.
- WLAs for Outfall 001 and CSOs remaining after completion of the LTCP to achieve Bay WQS during the critical period within the hydrologic years 1991 through 2000.

The comparisons in **Exhibit No. 2** show the following:

- The District distributions to Blue Plains for TN require an increase to satisfy permit requirements for a TN effluent concentration of 4.0 mg/L.
- The District distributions to Blue Plains for TN, TP and Total-Sed will require increases for Outfall 001 if WLAs are needed to satisfy the Bay Model Critical Period. Increases to distributions for CSOs remaining after completion of the LTCP will also be required if WLAs are needed to satisfy the Bay Model Critical Period.
- The District distribution to Blue Plains for Total-Sed may be reduced if the permit requirement of 7.00 mg/L is used to calculate the distribution.
  The Maryland TN allocation to Blue Plains requires an increase for the Maryland design flow of 169.7 mgd or the flow will have to be restricted to a rate equivalent to the TN allocation of 1,993,000 lbs/year at 4.00 mg/L or 163.7 mgd.

The Virginia Total-Sed allocation to Blue Plains requires an increase for the Virginia design flow of 47.8 mgd or the flow will have to be restricted to a rate equivalent to the Total-Sed allocation of 726,823 lbs/year at 7.00 mg/L or 34.1 mgd.

C. The reserve for growth should not be listed as separate WLAs in the Bay TMDL.

Table 1 in the Draft WIP distributed a portion of the WLAs assigned to Outfall 002 to a reserve for growth (see draft WIP, page 18, Table 4). Because this reserve could be construed to restrict DC Water's ability to use all of the WLAs distributed to Outfall 002 to serve the District's current flows to Blue Plains, DC Water has asked DDOE to include in the final WIP the WLAs now distributed to the reserve in one total distribution to Outfall 002. The District is already using all of its capacity in Blue Plains. Consequently, the District's current flows would have to be restricted if the approximately 13 MGD of capacity reflected in the reserve for growth in Table 4 of the Draft WIP was subtracted from the District's capacity allocation. Therefore, it is important to DC Water's ability to serve the District's current flows to Blue Plains that the Bay TMDL include the WLAs for Outfall 002 in one total distribution to Outfall 002. In other words, the final TMDL should not include a separate distribution reserved for growth.

The IMA flow allocations listed in Section B above for the Blue Plains user jurisdictions already include capacity for growth and under the provisions of the IMA, any additional allocation for the District would be obtained by off-loading flow from a Maryland or Virginia user because there are no plans to expand Blue Plains beyond 370 mgd IMA capacity.

D. Footnote (1) in Table 1 under Section 7.1.4 of the WIP.

DDOE added the second paragraph in Section 7.1.4 on page 32 of the Draft WIP at DC Water's request. This paragraph is designed to serve two purposes: The first is to expressly recognize in the WIP and Bay TMDL that capacity reallocations among the Blue Plains users may occur in the future; and second, to authorize transfers of WLAs in the TMDL provided they do not adversely affect DC Water's ability to comply with its permit. Otherwise, the regulatory uncertainty surrounding such transfers could make it extremely difficult for those with allocated capacity to plan for and implement future capacity reallocations that required flows and WLAs to be transferred to other plants. Footnote (1) would avoid this problem by providing the regulatory authorization needed for such transfers up front in the TMDL.

Unfortunately, however, DDOE added the following sentence at the end of the language: "The District's allocation remains the property of the District of Columbia and shall be used for permit compliance for flows contributed by the District." DC Water has asked DDOE to remove this

sentence in the final WIP because it is unnecessary and could be the source of confusion and conflict in the future.

The sentence is unnecessary because the allocations contributed by the respective jurisdictions have value only to the extent they are incorporated as load limits in the Blue Plains permit, and once incorporated in the permit, are indistinguishable for purposes of treatment and permit compliance. While the allocations contributed by the District, Maryland, and Virginia reflect different concentrations, Blue Plains treats all flows, regardless of the source, to one concentration. The sentence could be the source of confusion and conflict in the future because it appears to conflict with the preceding language in the paragraph by suggesting that because a jurisdiction owns the allocations contributed by it, the jurisdiction has the right to transfer its allocations away from Blue Plains even though such a transfer would undermine DC Water's ability to comply with its permit.

E. Table 22 in the Draft WIP should be revised to conform to Table 4 in the final WIP.

The allocation summary in Table 22 on page 71 of the Draft WIP is inconsistent with the detailed allocations in Table 4 on page 18 of the Draft WIP. Therefore, DC Water has asked DDOE to revise Table 22 in the final WIP to conform to Table 4.

We appreciate the opportunity to comment on the Draft Chesapeake Bay TMDL.

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EXHIBIT NO. 1

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Subject: Follow Up on VA CSO Discussion

Colleagues -
Thank you for this morning's call on calculating combined sewer system WWTP loads in Virgi s Phase I WIP, the Watershed Model, and the Chesapeake Bay TMDL. As we discussed, EPA expects in the Phase I WIPs that all WWTPs submit allocations based on design flow rather than dry weather flow, average wet weather flow treated through the facility, or peak flow. Using the Richmond plant as an example, this would equate to a flow of 75 mgd. EPA will calculate the Chesapeake Bay TMDL WLA based on the flow multiplied by the concentration. This approach ensures consistency among all WWTPs and CSO communities in the watershed.

If VA is interested in pursuing alternative approaches for the Phase II WIPs such as average wet weather flow, the jurisdiction should work through the Chesapeake Bay Program Wastewater Workgroup, coordinated by Ning Zhou. Ning agreed to place this issue on the next Workgroup agenda if VA is interested in proposing alternative approaches.

Thank you, and please let us know if you have any follow up questions.
Katherine

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EXHIBIT NO. 2

SUMMARY OF BLUE PLAINS AND DISTRICT COMBINED SEWER SYSTEM CHESAPEAKE BAY WIP AND TMDL WASTE LOAD ALLOCATIONS (WLAs) – WIP WLAs COMPARED TO WLAS REQUIRED IN TMDL TO CONFORM TO NPDES PERMIT AND DESIGN PROGRAM

JURISDICTION	DESIGN FLOW MGD	TOTAL NITROGEN (TN) – WLA WIP LBS/YEAR	TMDL [1] MG/L	TMDL [1] LBS	DIFFERENCE LBS/YEAR	TOTAL PHOSPHORUS (TP) - WLA WIP LBS/YEAR	TMDL [1] MG/L	TMDL [1] LBS	DIFFERENCE LBS/YEAR	TOTAL SEDIMENT (TSS) (TOTAL – SED) - WLA WIP LBS/YEAR	TMDL [1] MG/L	TMDL [1] LBS/YEAR	DIFFERENCE LBS/YEAR
A. DISTRICT													
1. BLUE PLAINS GROWTH		157,640		[2]		[illegible]		[2]		[illegible]		[2]	
2. OUTFALL 002[2]		1,751,032		1,917,170		81,095		88,389		3,153,688		3,131,801	
3. OUTFALL 001[3]		134,073		146,730	12,657	4,304		4,710	406	438,634		480,042	41,408
4. TOTAL - BLUE PLAINS	169.5	2,042,745	3.96	2,063,900	21,155	92,693	0.18	93,099	406	3,875,941	7.51	3,611,843	7.00 (264,098)
5. CSOs, POST LTCP[2]		3,809		4,495	686	810		956	146	105,350		124,325	18,975
6. TOTAL, DISTRICT		2,046,554		2,068,395		93,503		94,055		3,981,291		3,736,168	
B. SUBURBS													
7. MD TO BLUE PLAINS[4]	169.7	1,993,000	3.86	2,066,335	73,335	92,985	0.18	92,985	0.18	3,616,086	7.00	3,616,086	7.00
8. VA TO BLUE PLAINS	47.8	581,458	4.00	581,458		26,166	0.18	26,166	0.18	726,823	5.00	1,018,556	7.00
9. TOTAL, SUBURBS	217.5	2,574,458		2,647,793	73,335	119,151		119,151		4,342,909		4,634,642	
C. BLUE PLAINS													
10. TOTAL BLUE PLAINS		4,617,203		4,711,693	94,490	211,844		212,250	406	8,218,850		8,246,485	27,633
11. DISTRIBUTION TO 001		134,073		146,730	12,657	4,304		4,710	406	438,634		480,042	41,408
12. DISTRIBUTION TO 002	387.0	4,483,130	3.80	4,564,963	81,833	207,540	0.18	207,540	0.18	7,780,216	6.60	7,766,443	6.59 (13,770)
13. 002 PEAK AT 435 MGD	435.0	4,483,130	3.39	4,564,963	3.45	207,540	0.16	207,540	0.16	7,780,216	5.87	7,766,443	5.86

Footnotes:

[1] WLAs required in the TMDL to provide NPDES Permit compliance.

[2] WLAs for Blue Plains Growth and Outfall 002 combined and calculated to obtain Total – Blue Plains allocation shown on Line A.4.

[3] WLA in WIP column based on average of years 1991 through 2000. WLA in TMDL column based on average of Critical Period, years 1993 through 1995.

[4] MD WLA in WIP and TMDL column for Total-Sed based on permit concentration of 7.00 mg/L, not MD WIP concentration of 30 mg/L.